Survey and Manage Terrestrial Mollusk Surveys for Rayonier Upper Fahnestock Creek near Forks, Washington

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INTRODUCTION

Rayonier, Forest Resources Inc. (Rayonier) has proposed to reopen an old spur road off of US Forest Service (USFS) C8500 road. This spur road crosses through lands managed by the USFS within the boundaries of Olympic National Forest. The spur road is located off of Mary Clark and C8000 Roads, approximately 6 miles south of Sappho in Clallam County, Washington. Rayonier has proposed to reopen and develop access road that will cross through two USFS property sites along Upper Fahnestock Creek. According to USFS regulations, terrestrial mollusk surveys for Survey and Manage species must be conducted prior to any ground disturbing activities. To fulfill these regulations, terrestrial mollusk surveys were conducted by Erin Colclazier of Hamer Environmental L.P. for Rayonier.

The two sites selected for survey are located on Olympic National Forest lands approximately 5.5 miles south from the intersection with Highway 101. The Upper Fahnestock Creek Road is located at T29N, R12W, Sec. 26 with survey sites located at NW 1/16 of SW ¼ (Site A) and SE 1/16 of NW ¼ (Site B) of Sec. 26 respectively (Figures 1, 2).

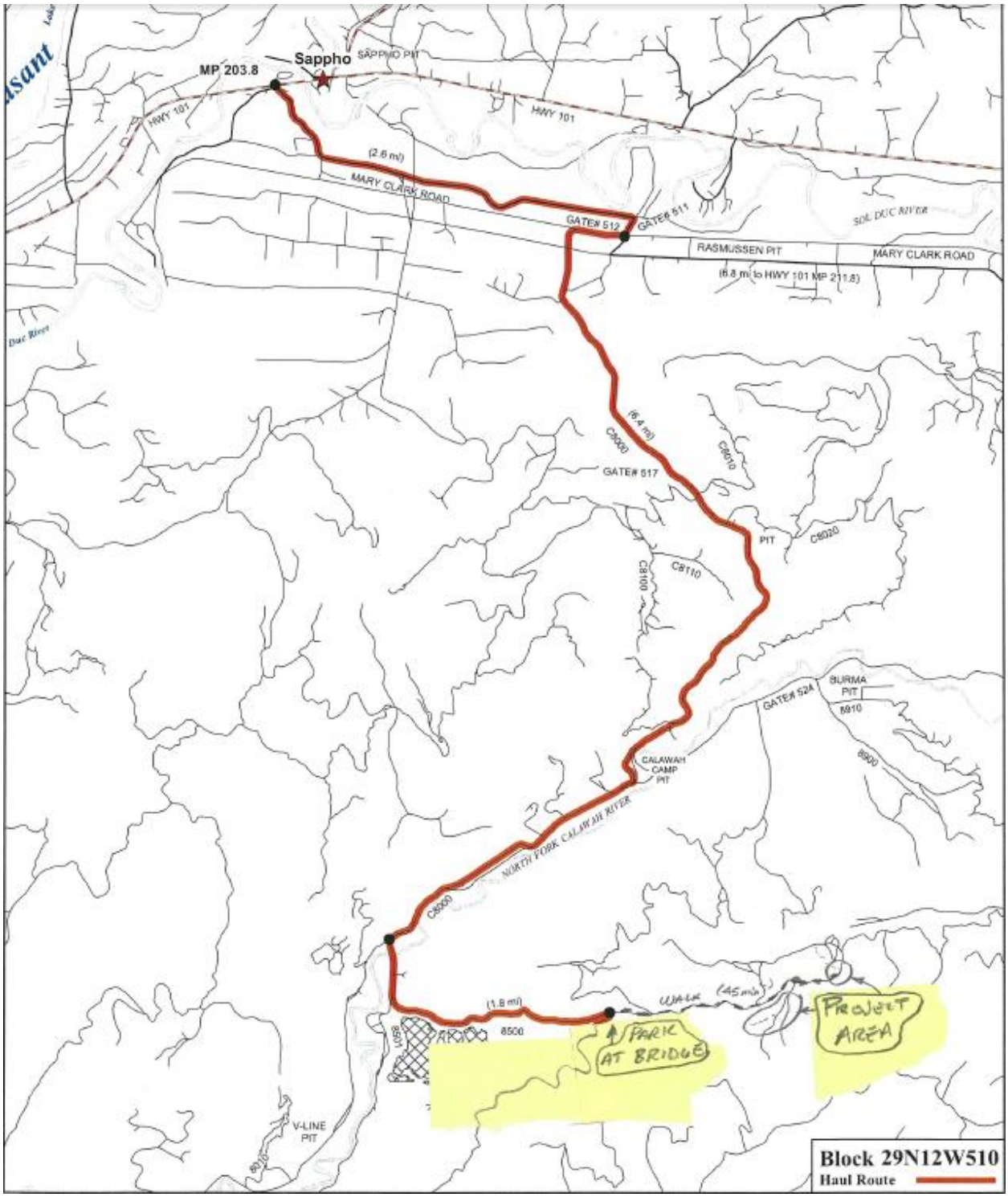


Figure 1. Upper Fahnestock Creek Site vicinity location (project access identified with red and survey sites A (west) and B (east) identified as project areas), Clallam County, WA, 2012.

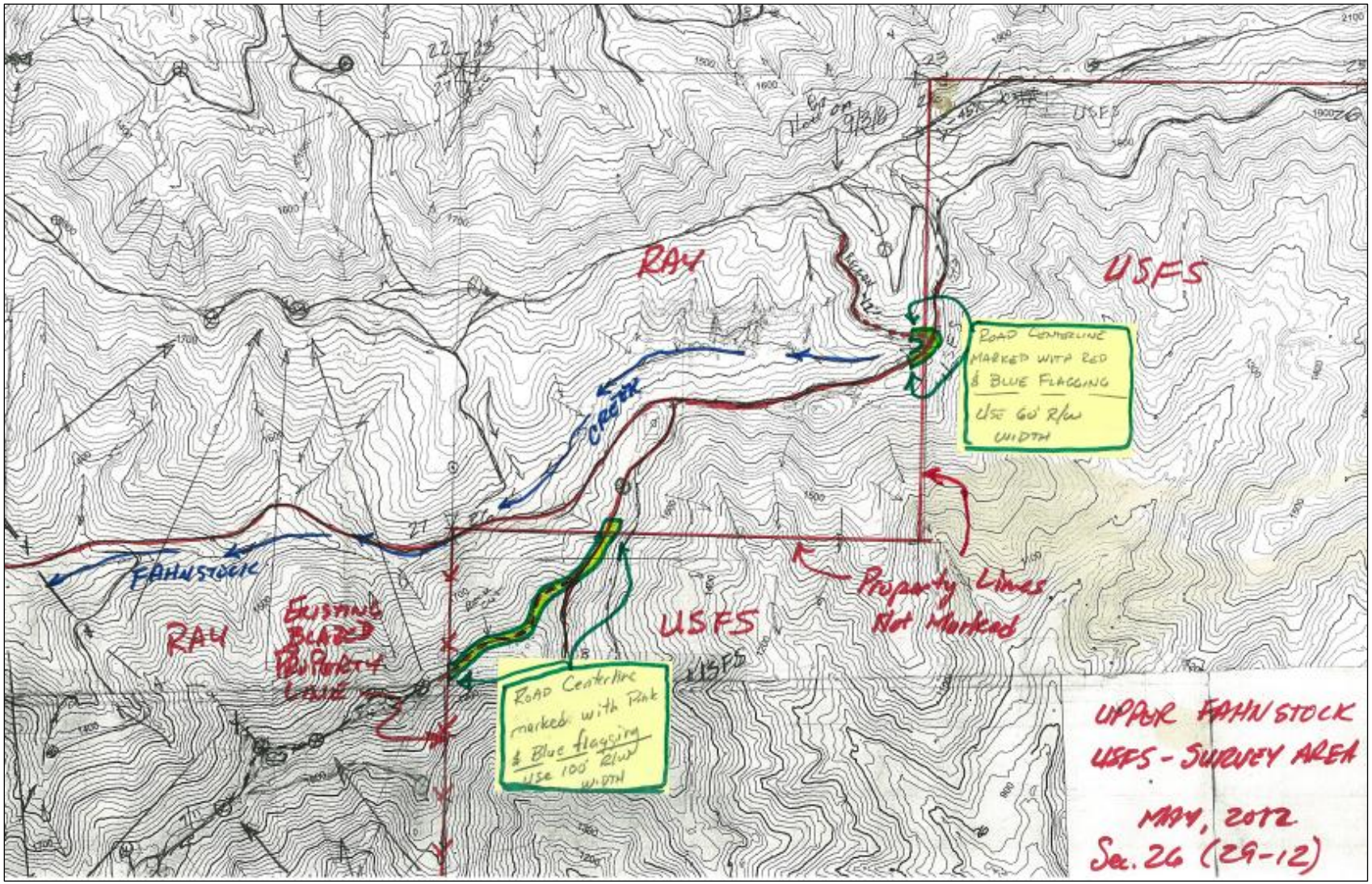


Figure 2. Upper Fahnestock Creek USFS Road Project, with USFS survey area segments (highlighted in yellow and green) and land ownership noted in red. Project is reopening of Upper Fahnestock Creek Road, Clallam County, Washington, 2012.

BACKGROUND

Survey and Manage Species

Species designated as Survey and Manage Species (S&M) are considered to be "at risk" under the Northwest Forest Plan. The list of designated species is reviewed annually by the USFS and Bureau of Land Management (BLM). According to the Northwest Forest Plan, surveys for S&M species must be conducted prior to any habitat disturbing activity. The S&M survey protocol and species list updated in 2003 (latest version) was used in this survey (Duncan et al. 2003).

Nine Survey and Manage terrestrial mollusk species were potentially present at the project site, and are described in Table 1.

Table 1. Survey and Manage Mollusks Potentially Within the Project Area.

Species Name	Scientific Name	Habitat Description
SNAILS		
Puget Oregonian	Cryptomastix devia	Mature moist and riparian forest, under logs, among leaf litter and/or talus, often near bigleaf maple and sword fern.
Hoko vertigo	Vertigo n sp.	Known only from the Hoko River drainage in Clallam Co. Found in old-growth and riparian forest on smooth trunks and lower limbs of deciduous trees and shrubs.
Oregon megomphix	Megomphix hemphilli	Moist coniferous and deciduous forest habitats, particularly bigleaf maple and sword fern.
SLUGS		
Evening fieldslug	Deroceras hesperium	Found in leaf litter, debris, rock crevices and low vegetation.
Keeled jumping slug	Hemphillia burringtoni	Moist coniferous forests on conifer logs and/or low vegetation, litter and debris.
Warty jumping slug	Hemphillia glandulosa	Moist coniferous forests on conifer logs and/or low vegetation, litter and debris.
Malone jumping slug	Hemphillia malonei	Moist forest 50+ years old, with dense sword fern cover, conifer logs, decaying stumps, and at marshy sites with dense skunk cabbage.
Panther jumping slug	Hemphillia pantherina	Mature riparian forest on litter near streams on down logs and sword fern.
Blue-gray tail-dropper	Prophysaon coeruleum	Moist conifer and mixed forests on logs, leaf and needle litter, bigleaf maple and sword fern.

Previous Terrestrial Mollusk Sightings

No S&M terrestrial mollusk surveys have been conducted within the immediate vicinity of the Upper Fahnestock Creek project area (Joan Ziegltrum pers. comm.). However, within 20 miles of the site, blue-gray tail-dropper (*Prophysaon coeruleum*) was identified. S&M terrestrial mollusk surveys have only recently (2010) become a requirement for land-disturbing projects on Forest Service lands, so few records exist of recent terrestrial mollusk sightings.

Hamer Environmental obtained project site maps from Meghan Tuttle, Road Maintenance and Planning Supervisor for Rayonier, which delineated the segments of land to be surveyed (Figures 1 and 2). Clear boundaries were delineated at the project site by Rayonier. The centerline, 20-foot buffer and entire length were flagged for the proposed road. Surveys encompassed the proposed road segment, and an additional 100-foot buffer, covering 50 feet on either side of the proposed road centerline.

Survey Timing

Protocols established by the US Forest Service were followed to thoroughly search the site following the Survey Protocol for Terrestrial Mollusk Species from the Northwest Forest Plan, Version 3.0 (Duncan et al. 2003). According to the protocol, early summer surveys may be conducted as long as: 1) the top ½-inch of soil/duff is moist; 2) daytime air temperatures remain below 27° C (80° F); and, 3) aestivting mollusks are not present at the site. Fall surveys can usually begin in mid-September to early October but yearly variations in seasonal weather can justify an earlier or later survey season. The fall survey began: 1) after autumn rains had soaked the ground (after 3 days of moderate rain); 2) when the forest floor litter was wet through the soil between trees or; 3) after morning dew or frost was present when surveying in areas in which autumn rains did not occur before the ground froze. Surveys could continue into the late fall or early winter until the air temperature remained below 5º C (40º F) for more than 3 days, the ground remained frozen, or snow cover prevented a reasonable search. Following protocol, two survey visits were conducted at the project area, spaced at least three weeks apart. Surveys were conducted on 28 June and 29-30 October 2012 by Hamer Environmental biologist, Erin Colclazier.

Survey Method

The Hamer surveyor meandered through the project area looking for any suitable mollusk habitat following the guidelines below:

1. Two 20-minute "sample areas" were identified for every 10 acres of suitable habitat in the survey unit. For units less than 10 acres, 2 sample areas were required.
2. For every 10 acres, opportunistic "point searches" were made of key habitat features along the survey routes. These short searches were done by rolling over small logs, looking under bits of bark, rocks, vegetation and debris, picking through hardwood litter and searching the needle and leaf litter at the base of logs and shrubs. The surveyor checked representative sample points where snails and slugs might be expected to be found. No single point was searched for more than 5 minutes (for a total of 20 minutes of point searches).
3. "Search areas" (20-minute search) were 5 meters in diameter.
4. A minimum of 1 hour of search time was completed per 10 acres of habitat, which did not include hiking, species identification and flagging time.
5. "Search areas" were flagged only if a Survey and Manage species was found.
6. A GPS reading of an opportunistic "point search" was only taken if a Survey and Manage species was found. When a Survey and Manage species was detected, the area was flagged.

Data Collection

Erin Colclazier, biologist for Hamer Environmental L.P., conducted each survey and compiled a comprehensive list of slug and snail species found during the two survey visits. The data recorded at the survey search areas and at the opportunistic search points where a Survey and Manage species was found included air and soil temperature, elevation, slope, aspect, special habitat features, plant association, overstory botanical species and understory botanical species.

RESULTS

Survey Conditions and Species Found

For the survey visits conducted, air and ground temperatures on each survey day remained above 40º F, but below 80° F, thereby meeting the environmental constraints of the survey protocol. Of the nine Survey and Manage species potentially present in the project vicinity, none were identified in the project area. All mollusk species identified during the two survey visits are listed in Table 2.

Table 2. Upper Fahnestock Creek Comprehensive Mollusk Species List.

Species Name	Scientific Name	Visit 1	Visit 2
Banana slug	Ariolomax columbianus	x	x
Oregon lancetooth snail	Ancotrema hybridum		x
Beaded lancetooth snail	Ancotrema sportella	x	x
Robust lancetooth snail	Haplotrema vancouverences	x	x
Pacific sideband snail	Monadenia fidelis	x	

No S&M terrestrial mollusks were identified at Upper Fahnestock Creek survey sites. Banana slugs identified at the site were found on top of leaf litter, on salal leaves and under sword fern fronds, as well as along the base of conifer tree trunks. The Oregon, beaded and robust lancetooth snails were located under small to large (<5" to 30" DBH) coarse woody debris and in needle litter at the bases of conifer stumps. The Pacific sideband snail was found under leaf litter.

Habitat Description

The project areas consist of Douglas fir (*Psuedotsuga menziesii*), grand fir (*Abies grandis*) and western hemlock (*Tsuga heterophylla*) with western red cedar (*Thuja plicata*), red alder (*Alnus rubra*) [and at site B - bigleaf maple (*Acer macrophyllum*)] in the overstory. A variety of shrubs and forbs were present in the understory, most commonly: swordfern (*Polystichum munitum*), salal (*Gaultheria shallon*), Oregon-grape (*Mahonia nervosa*), false huckleberry (*Menziesia ferruginea*) and salmonberry (*Rubus spectabilis*). An existing single track roadbed runs through a portion of the project areas (Figure 2). At site A, the proposed right-of-way road, runs along a small ridge and then along a forested cliff area (Appendix 2, Site B photos).

LITERATURE CITED

Duncan, N., Burke, T., Dowlan, S. and Hohenlohe, P. 2003. Survey protocol for terrestrial mollusk species from the Northwest Forest Plan: Version 3.0. USDA Forest Service/USDI Bureau of Land Management, Portland, OR.

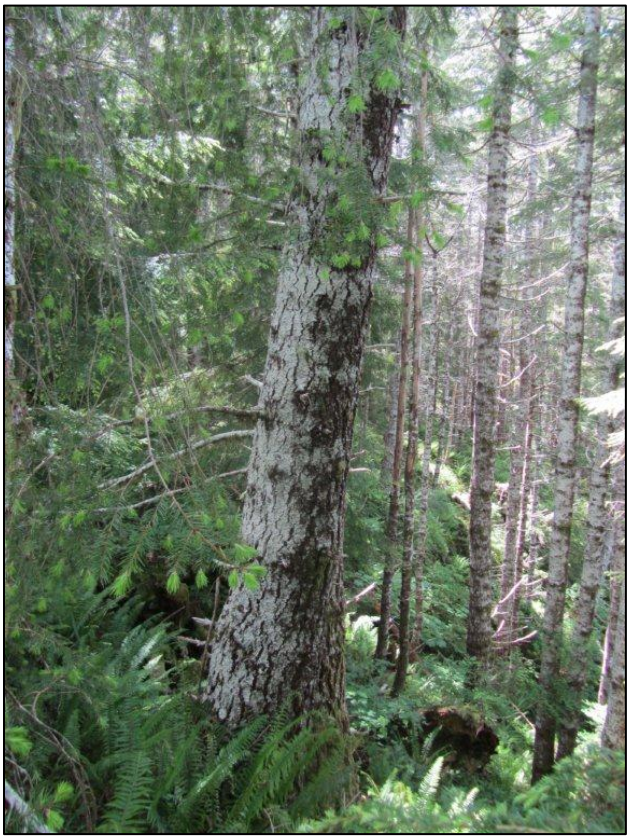
Personal Communication

Ziegeltrum, Joan. Forest Botanist, Olympic National Forest. Personal communication October 2012 with Erin Colclazier, Biologist for Hamer Environmental L.P. via email.

APPENDIX 1. Survey and Manage Mollusk Species Requiring Pre-Disturbance Surveys.

S&M Mollusk	Category	S&M Mollusk	Category
Ancotrema voyanum	D	*Juga (o.)* sp. nov. *3*	A
Cryptomastix devia	A	*Lyogyrus* sp. nov. *1*	A
Cryptomastix hendersoni	A	*Lyogyrus* sp. nov. *2*	A
Deroceras hesperium	B4	*Lyogyrus* sp. nov. *3*	A
Fluminicola seminalis	A	*Megomphix hemphilli*	F
Fluminicola sp. nov. *11*	A	*Monadenia chaceana*	B4
Fluminicola sp. nov. *14*	A	*Monadenia fidelis minor*	A
Fluminicola sp. nov. *15*	A	*Monadenia infumata ochromphallus*	D5
Fluminicola sp. nov. *16*	A	*Monadenia troglodytes troglodytes*	A
Fluminicola sp. nov. *17*	A	*Monadenia troglodytes wintu*	A
Fluminicola sp. nov. *18*	A	*Oreohelix* sp. nov.	A
Fluminicola sp. nov. *19*	A	*Pristiloma arcticum crateris*	A
Fluminicola sp. nov. *20*	A	*Prophysaon coeruleum*	A
Fluminicola sp. nov. *3*	A	*Trilobopsis roperi*	A
Hemphillia burringtoni	E	*Trilobopsis tehamana*	A
Hemphillia glandulosa	E	*Vertigo* sp. nov.	A
Hemphillia malonei	C	*Vespericola pressleyi*	A
Hemphillia pantherina	B4	*Vespericola shasta*	A
Juga (o.) sp. nov. *2*	A	*Vorticifex* sp. nov. *1*	E

APPENDIX 2. Upper Fahnestock Creek Site Photos.



Site A, north of road-bed

Site A, showing cliffy slope along proposed road

Site B, showing existing road bed

Site B, surrounding forest